

AMENDMENTS TO THE CLAIMS

Claim 1. (Currently amended) A medical device, comprising:

a body;

a position sensor at a portion of the body, the position sensor having a core made of a Wiegand effect material; and a winding circumferentially positioned around the core, the position sensor providing signals; and

a signal processor, which is coupled to receive the signals and is adapted to determine a temperature of the position sensor and to determine, responsively to the signals and the temperature, location coordinates of the portion of the body.

Claim 2. (Previously amended) The medical device according to Claim 1, wherein the position sensor is used to determine position coordinates.

Claim 3. (Previously amended) The medical device according to Claim 2, wherein the position sensor is also used to determine orientation coordinates.

Claim 4. (Currently amended) The medical device according to Claim 1, wherein the ~~position sensor maintains~~ signal processor is adapted to determine the location coordinates with accuracy of ≤ 1 mm ~~sensitivity~~ at temperatures greater than 75°C.

Claim 5. (Currently amended) The medical device according to Claim 4, wherein the ~~position sensor maintains~~ signal processor is adapted to determine the location coordinates with accuracy of ≤ 1 mm ~~sensitivity~~ at temperatures at approximately 80°C.

Claim 6. (Previously amended) The medical device according to Claim 1, wherein the core has an outer diameter less than approximately 0.3mm.

Claim 7. (Previously amended) The medical device according to Claim 6, wherein the core has an outer diameter of about 0.25mm.

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Claim 8. (Previously amended) The medical device according to Claim 7, wherein the winding is attached to the core.

Claim 9. (Previously amended) The medical device according to Claim 8, wherein a combination of the core and the wire winding has an outer diameter less than approximately 0.5mm.

Claim 10. (Previously amended) The medical device according to Claim 9, wherein the combination of the core and the winding have an outer diameter of about 0.4 mm.

Claim 11. (Previously amended) The medical device according to Claim 10, wherein the material of the core comprises cobalt.

Claim 12. (Previously amended) The medical device according to Claim 11, wherein the material of the core further comprises vanadium.

Claim 13. (Previously amended) The medical device according to Claim 12, wherein the material of the core further comprises iron.

Claim 14. (Previously amended) The medical device according to Claim 13, wherein the material of the core comprises approximately 20%-80% cobalt.

Claim 15. (Previously amended) The medical device according to Claim 13, wherein the material of the core comprises approximately 2%-20% vanadium.

Claim 16. (Previously amended) The medical device according to Claim 13, wherein the material of the core comprises approximately 25%-50% iron.

Claim 17. (Previously amended) The medical device according to Claim 13, wherein the material of the core comprises approximately 52% cobalt, 10% vanadium and 38% iron.

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Claim 18. (Previously amended) The medical device according to Claim 8, wherein the winding is made of copper.

Claim 19. (Previously amended) The medical device according to Claim 3, wherein the position sensor has an accuracy within approximately 0.5 mm.

Claim 20. (Currently amended) A medical device comprising:

a body;

a position sensor at a portion of the body, the position sensor having a core made of a high permeable material, the material being magnetic material that produces a magnetic field that switches polarity and causes a substantially uniform voltage pulse upon an application of an external field, the position sensor providing signals that determine location coordinates of the portion of the body; and

a signal processor, which is coupled to receive the signals and is adapted to determine a temperature of the position sensor and to determine, responsively to the signals and the temperature, location coordinates of the portion of the body.

Claim 21. (Previously amended) The medical device according to Claim 20, further comprising a winding circumferentially positioned around the core.

Claim 22. (Previously amended) The medical device according to Claim 20, wherein the position sensor is used to determine position coordinates.

Claim 23. (Previously amended) The medical device according to Claim 22, wherein the position sensor is also used to determine orientation coordinates.

Claim 24. (Currently amended) The medical device according to Claim 20, wherein the ~~position sensor maintains~~ signal processor is adapted to determine the location coordinates ~~with sensitivity~~ accuracy of ≤ 1 mm at temperatures greater than 75°C.

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Claim 25. (Currently amended) The medical device according to Claim 24, wherein the ~~position sensor maintains~~ signal processor is adapted to determine the location coordinates with sensitivity accuracy of ≤ 1 mm at temperatures at approximately 80°C.

Claim 26. (Previously amended) The medical device according to Claim 20, wherein the core has an outer diameter less than approximately 0.3mm.

Claim 27. (Previously amended) The medical device according to Claim 26, wherein the core has an outer diameter of about 0.25mm.

Claim 28. (Currently amended) The medical device according to Claim 27, wherein the position sensor comprises a winding, wherein the winding is attached to the core.

Claim 29. (Previously amended) The medical device according to Claim 28, wherein a combination of the core and the winding has an outer diameter less than approximately 0.5mm.

Claim 30. (Previously amended) The medical device according to Claim 29, wherein the combination of the core and the winding have an outer diameter of about 0.4 mm.

Claim 31. (Previously amended) The medical device according to Claim 30, wherein the material of the core comprises cobalt.

Claim 32. (Previously amended) The medical device according to Claim 31, wherein the material of the core further comprises vanadium.

Claim 33. (Previously amended) The medical device according to Claim 32, wherein the material of the core further comprises iron.

Claim 34. (Previously amended) The medical device according to Claim 33, wherein the material of the core comprises approximately 20%-80% cobalt.

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Claim 35. (Previously amended) The medical device according to Claim 33, wherein the material of the core comprises approximately 2%-20% vanadium.

Claim 36. (Previously amended) The medical device according to Claim 33, wherein the material of the core comprises approximately 25%-50% iron.

Claim 37. (Previously amended) The medical device according to Claim 33, wherein the material of the core comprises approximately 52% cobalt, 10% vanadium and 38% iron.

Claim 38. (Previously amended) The medical device according to Claim 28, wherein the winding is made of copper.

Claim 39. (Previously amended) The medical device according to Claim 23, wherein the position sensor has an accuracy within approximately 0.5 mm.

Claim 40. (Previously amended) The medical device according to Claim 20, wherein the material of the core comprises a copper, nickel and iron alloy (CuNiFe).

Claim 41. (Previously amended) The medical device according to Claim 20, wherein the material of the core comprises an iron, chrome and cobalt alloy.

Claim 42. (New) The medical device according to Claim 1, wherein the signal processor is adapted to sense a variation in an electrical characteristic of the winding, and to determine the temperature of the position sensor responsively to the variation.

Claim 43. (New) The medical device according to Claim 42, wherein the electrical characteristic comprises a resistance.

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Claim 44. (New) The medical device according to Claim 20, wherein the signal processor is adapted to sense a variation in an electrical characteristic of the position sensor, and to determine the temperature of the position sensor responsively to the variation.